WHAT IS CLAIMED IS:

1. A non-contact method for determining a parameter of an insulating film formed on a substrate, comprising:

measuring at least two surface voltages of the insulating film, wherein the surface voltages are measured after different charge depositions on the insulating film, and wherein said measuring is performed in two or more sequences;

determining individual parameters for the two or more sequences from the at least two surface voltages and the different charge depositions; and

determining the parameter of the insulating film as an average of the individual parameters.

2. The method of claim 1, wherein the average is a weighted average.

3. The method of claim 1, wherein the insulating film is a leaky insulating film.

4. The method of claim 1, wherein the insulating film is a nitridated insulating film.

5. The method of claim 1, wherein a first of the two or more sequences is a reverse of a second of the two or more sequences.

6. The method of claim 1, wherein the parameter is equivalent oxide thickness.

7. The method of claim 1, wherein the parameter is substantially independent of leakage in the insulating film.

8. The method of claim 1, wherein a time delay between the different charge depositions and said measuring is kept at a minimum such that the at least two surface voltages do not decrease substantially between the different charge depositions and said measuring due to leakage in the insulating film.

9. The method of claim 1, wherein said measuring is performed in a minimum amount of time such that the at least two surface voltages do not decrease substantially during said measuring due to leakage in the insulating film.

10. The method of claim 1, wherein the different charge depositions comprise depositing a charge on the insulating film, and wherein the charge comprises a positive charge, a negative charge, or some combination of a positive and a negative charge.

11. The method of claim 1, wherein the different charge depositions are substantially uniform across an area on which the different charge depositions are performed.

12. The method of claim 1, wherein the parameter is equivalent oxide thickness, the method further comprising measuring an optical thickness of the insulating film and determining a nitrogen dose, a nitrogen percentage, or a presence of nitrogen in the insulating film using the equivalent oxide thickness and the optical thickness.

13. The method of claim 1, wherein the parameter is equivalent oxide thickness, the method further comprising determining a nitrogen dose, a nitrogen percentage, or a presence of nitrogen in the insulating film using the equivalent oxide thickness and a measure of leakage through the insulating film.

14. The method of claim 1, further comprising altering a parameter of a process tool in response to the parameter of the insulating film using a feedback control technique or a feedforward control technique.

15. A computer-implemented method, comprising determining a characteristic of nitrogen in an insulating film using two parameters of the insulating film selected from the group consisting of equivalent oxide thickness, optical thickness, and a measure of leakage through the insulating film, wherein the characteristic comprises a nitrogen dose, a nitrogen percentage, or a presence of nitrogen in the insulating film.

16. The method of claim 15, wherein the equivalent oxide thickness is substantially independent of the leakage in the insulating film.

17. The method of claim 15, wherein the insulating film is a leaky insulating film.

18. The method of claim 15, wherein the insulating film is formed on a wafer using decoupled plasma nitridation.

19. The method of claim 15, further comprising altering a parameter of a process tool in response to the characteristic using a feedback control technique or a feedforward control technique.

20. A computer-implemented method, comprising determining a characteristic of an insulating film using two parameters of the insulating film selected from the group consisting of equivalent oxide thickness, optical thickness, and a measure of leakage through the insulating film, wherein the characteristic comprises a dose of a component in the insulating film, a percentage of the component in the insulating film, or a presence of the component in the insulating film.

21. A computer-implemented method, comprising determining at least one composition parameter and physical thickness of an insulating film using a model and two or more parameters of the insulating film as input to the model, wherein the two or more parameters are functions of the at least one composition parameter or the physical

thickness, and wherein at least one of the two or more parameters is from a non-contact electrical measurement.

22. The method of claim 21, wherein the at least one composition parameter comprises a nitrogen dose, a nitrogen percentage, or a presence of nitrogen in the insulating film.

23. The method of claim 21, wherein the two or more parameters comprise equivalent oxide thickness, optical thickness, a thickness measurement from tunneling electron microscopy, X-ray photoelectron spectroscopy, scanning capacitance microscopy, scanning force microscopy, energy dispersive X-ray spectroscopy, electron stimulated X-ray, X-ray diffraction, or X-ray reflectance, data from charge vs. voltage, current vs. voltage, or capacitance vs. voltage measurements, or information about a process used to form the insulating film.

24. The method of claim 21, wherein the at least one composition parameter comprises a characteristic of nitrogen or oxygen in the insulating film, and wherein the insulating film is formed on a wafer using decoupled plasma nitridation or a high-k process.

25. The method of claim 21, further comprising monitoring or controlling at least one parameter of a process tool using the at least one composition parameter or the physical thickness.